California Regional Water Quality Control Board

Los Angeles Region

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320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.swrcb.ca.gov/rwqcb4

Terry Tamminen
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

August 31, 2004

Gary T.K. Tse
Director of Facilities Planning Bureau
Los Angeles County Sheriffs Department
1000 South Fremont Avenue, Unit 47
Building A-9 East, 5th Floor North
Alhambra, CA 91803

Dear Mr. Tse:

REVISED DETECTION MONITORING PROGRAM – PETER PITCHESS LANDFILL, SAUGUS, CA (FILE NO. 75-014)

Reference is made to the Los Angeles County Sheriffs Department (Sheriffs Department) request of May 20, 2004 to revise the detection monitoring program for the Peter Pitchess Landfill (Landfill).

The Sheriffs Department filed a Report of Waste Discharge for two existing landfills at the Peter Pitchess Honor Rancho detention facility on April 7, 1975. In 1975, these two sites, a Class III municipal waste landfill and an inert waste site, became subject to waste discharge requirements under Regional Board Order No. 75-114. Subsequently, the Sheriffs Department undertook a required Solid Waste Assessment Test (SWAT) investigation. In our letter of April 25, 1994, the Regional Board stated that the results of the SWAT investigation indicated that the Class III waste site might be impacting groundwater quality, and required the Sheriffs Department to complete two additional groundwater monitoring events. On March 20, 1995, the Sheriffs Department completed the first additional SWAT monitoring event, but as of August 10, 2001 the Sheriffs Department had not completed the second additional monitoring event and had stopped routine water quality monitoring at the Landfill altogether. On September 19, 2001, the Regional Board adopted Order No. 01-133 to enforce routine water quality monitoring at the Landfill. The Sheriffs Department has complied with monitoring requirements of Order No. 01-133.

Order No. 01-133 reinstated the water quality monitoring program previously required for the Landfill. However, in Order No. 01-133 the Sheriffs Department was allowed the opportunity to submit a technical report, to be approved by the Executive Officer, detailing the existing "conditions and effectiveness of all monitoring wells" and to "propose upgrades to the current groundwater monitoring systems at either of the landfills to ensure that they can detect water quality impacts if pollutants are released from either landfill to groundwater." Having completed

five routine water quality monitoring events since the adoption of Order No. 01-133 and having confirmed that there is no release from the Class III municipal waste site, the Sheriffs Department requested the following changes to the Landfill monitoring program:

- Installation of a monitoring well at the "toe" of the Class III municipal waste site immediately downgradient of the site in an area that would provide the earliest indication of a potential release.

- Discontinue monitoring of existing monitoring wells MW-4 and MW-5, which are side-gradient to the Class III municipal waste site and provide redundant water quality information.

- Discontinue water quality monitoring at the inert waste site, which has never shown any indication of water quality impacts.

- Discontinue vadose zone monitoring at the Landfill, as these probes have proven to be of limited value in assessing water quality impacts.

- Refine the monitoring parameters and constituents of concern that must be tested and analyzed at the Class III municipal waste site.

Regional Board staff concur that the proposed recommendations allow for an effective detection monitoring program to evaluate for potential releases from the Landfill. Attached is a revised Monitoring and Reporting Program (M&RP) for the Landfill that reflects the revisions to the monitoring program. Note that the Sheriffs Department is require to implement this amended M&RP immediately in order to maintain the existing monitoring schedule at the Landfill. Thus, the Sheriffs Department shall not delay in installing the monitoring well at the "toe" of the Class III municipal waste site and shall submit a technical report describing the exact location and construction details to the Executive Officer within 30 days.

If you have any questions regarding this letter, please contact Mr. Rodney Nelson at (213) 620-6119 or Enrique Casas at (213) 620-2299.

Sincerely,

Jonathan Bishop
Interim Executive Officer

cc: Virginia Maloles, County of Los Angeles Solid Waste Management Department
Bruce Kragen, Los Angeles County Sheriffs Department

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI-6198
FOR
COUNTY OF LOS ANGELES SHERIFFS DEPARTMENT
(PETER J. PITCHESS LANDFILL)

(File No. 75-014)

Monitoring and Reporting Program (M&RP) No. CI-6198 for the Peter J. Pitchess Landfill (Landfill) is being amended to revise the groundwater Detection Monitoring Program (DMP). This M&RP supersedes the September 19, 2001 monitoring provisions.

The County of Los Angeles Sheriffs Department (Discharger) shall implement this amended M&RP immediately:

A. GENERAL

1. Responsibilities of the Discharger are specified in §§ 13225(a), 13267(b) and 13387(b) of the California Water Code, and the State Water Resources Control Board Resolution No. 93-062. This self-monitoring program is issued pursuant to Specification No. A-18 of Regional Board Order No. 01-133. The principal purposes of a self-monitoring program by a waste discharger are:

    a. To document compliance with discharge requirements and prohibitions established by the Regional Board;

    b. To facilitate self-policing by the waste Discharger in the prevention and abatement of pollution arising from waste discharge; and

    c. To prepare water quality analyses; and

    d. To prepare vadose zone (unsaturated zone) gas, if applicable, and liquid quality analyses.

B. DEFINITION OF TERMS

2. The Monitored Media are those water media that are monitored pursuant to this M&RP. The monitored media may include:

    a. groundwater in the uppermost aquifer, in any other portion of the zone of saturation (California Code of Regulations title 27 [27 CCR], § 20164) in which it would be reasonable to anticipate that waste constituents migrating from the

landfill(s) could be detected, and in any perched zones underlying the landfill(s), and

b. any bodies of surface water that could be measurably affected by a release,

3. The Constituents of Concern (COC) are those constituents which are likely to be in the waste in the landfill(s) or which are likely to be derived from waste constituents, in the event of a release.

4. The Monitoring Parameters consists of a short list of constituents and parameters used for the majority of monitoring activity.

5. Standard Observations refers to:

   a. For receiving waters:

      i. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;

      ii. Discoloration and turbidity: description of color, source, and size of affected area;

      iii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;

      iv. Evidence of beneficial use: presence of water-associated wildlife;

      v. Flow rate; and

      vi. Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

   b. Along the perimeter of the landfill:

      i. Evidence of liquid leaving or entering the landfill, estimated size of affected area, and flow rate;

      ii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and

      iii. Evidence of erosion and/or of exposed refuse.

   c. For the landfill:

i. Evidence of ponded water at any point on the waste management facility;

ii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;

iii. Evidence of erosion and/or of daylighted refuse; and

iv. Standard Analysis and Measurements, which refers to:

A. Turbidity (only for water samples) in NTU:

B. Water elevation to the nearest 1/100th foot above mean sea level (only for groundwater monitoring); and

C. Sampling and statistical/non-statistical analysis of the monitoring parameters.

6. Matrix Effect refers to any increase in the Method Detection Limit (MDL) or Practical Quantitation Limit (PQL) for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample of water analyzed.

7. Facility-specific MDL, for a given analytical laboratory using a given analytical method to detect a given constituent (in spite of any matrix effect), means the lowest concentration at which the laboratory can regularly differentiate, with 99% reliability, between a sample which contains the constituent and one which does not.

8. Facility-specific PQL, for a given analytical laboratory using a given analytical method to determine the concentration of a given constituent (in spite of any matrix effect), means the lowest constituent concentration the laboratory can regularly quantify within specified limits of precision that are acceptable to the Regional Board's Executive Officer (Executive Officer).

9. Reporting Period means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. Therefore, the reporting period for monitoring parameters is semiannual, and an annual report, which is a summary of all the monitoring during the previous year, shall also be submitted to the Regional Board.

C. SAMPLING AND ANALYTICAL METHODS

10. Sample collection, storage, and analysis shall be performed according to the most recent version of Standard U.S. Environmental Protection Agency (USEPA) methods, and in

accordance with an approved sampling and analysis plan. Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the Discharger is responsible for seeing that the laboratory analysis of all samples from monitoring points and background monitoring points meets the following restrictions:

a. The methods and analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e. "trace" or "ND") in data from background monitoring points for that medium, the analytical methods having the lowest facility-specific MDL shall be selected from among those methods which would provide valid results in light of any matrix effects involved.

b. Trace results falling between the MDL and the facility-specific PQL, shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run and by an estimate of the constituent's concentration.

c. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with an estimate of the detection limit and quantitation limit actually achieved.

d. All Quality Assurance / Quality Control (QA/QC) data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection limits, the recovery rates, an explanation of any recovery rate that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery.

e. Upon receiving written approval from the Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance

of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given reporting period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.

f. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.

g. In cases where contaminants are detected in QA/QC samples (i.e. field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

h. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

D. WATER SAMPLING/ANALYSIS FOR DETECTION MONITORING

11. For monitoring parameter reports due on a semiannual basis, the groundwater monitoring wells shall be sampled and analyzed for the following:

Groundwater Monitoring Parameters
Chemical Oxygen Demand
Total Organic Halides
Total Organic Carbon
Total Dissolved Solids
Chloride
Sulfate
Boron
Hydroxide Alkalinity ($CaCO_3$)
Total Hardness (as $CaCO_3$)
Volatile Organics
Electrical Conductivity
pH
Groundwater Elevation

12. COC reports are due every five years. For monitoring parameter reports due on a five-year basis, the groundwater monitoring wells shall be sampled and analyzed for the following:

Groundwater Monitoring Parameters

Volatiles*
Semi-volatiles*
Pesticides*
PCB's*
Metals**
Biological Oxygen Demand
Bicarbonate
Carbonate
Foaming Agents
Herbicides
Nitrate (as N)
Nitrite
Oil and Grease
Sulfate
Sulfides
Total cyanide
Total phenols
Turbidity

*All peaks greater than 10% of the internal standard shall be identified and quantified for gas chromatography analyses.

** Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Hexavalent chromium, Lead, Magnesium, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, and Zinc.

13. Thirty-Day Sample Procurement Limitation:
For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken within a span of 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible (27 CCR, § 20415(e)(12)(B)). Groundwater sampling shall also include an accurate determination of the groundwater surface elevation and field parameters (temperature, pH, electrical conductivity, turbidity) for that monitoring point or background monitoring point (27 CCR, § 20415(e)(13)); groundwater elevations taken prior to purging the well and sampling for monitoring parameters shall be used to fulfill groundwater flow rate/direction analyses required under Item No. D.19 of this M&RP. Statistical or non-statistical analysis shall be carried out as soon as the data is available, in accordance with Section G (Statistical and Non-Statistical Analyses of Sample Data During a Detection Monitoring Program) of this M&RP.

14. Indirect Monitoring for Monitoring Parameters Conducted Semiannually:

All monitoring points assigned to detection monitoring (Item No. D.17 of this M&RP, below) and all background monitoring points shall be sampled semiannually during March and September. Monitoring for monitoring parameters shall be carried out in accordance with Item No. D.12 and Section G (Statistical and Non-Statistical Analyses of Sample Data During a Detection Monitoring Program) of this M&RP.

15. Direct Monitoring of all COCs Every Five Years:
In the absence of a release being indicated pursuant to Item No. D.15 and Item No. G.27 of this M&RP for a monitoring parameter or based upon physical evidence pursuant to Item No. F.22.c of this M&RP, or by a study required by the Executive Officer based upon anomalies noted during visual inspection of graphically-depicted analytical data (Item No. F.21.d.i of this M&RP), the Discharger shall sample all monitoring points and background monitoring points of water-bearing media for all COCs every fifth year, beginning with the year of adoption of Regional Board Order No. 01-133, with successive direct monitoring efforts being carried out alternately in the Spring/Summer of one year (Report Period ends October 30) and the Fall/Winter of the fifth year thereafter (Reporting Period ends April 30). Direct monitoring for COCs shall be carried out in accordance with Item No. D.13 and Section G (Statistical and Non-Statistical Analyses of Sample Data During A Detection Monitoring Program) of this M&RP, and shall encompass only those COCs that do not also serve as a monitoring parameter.

16. Monitoring Points and Background Monitoring Points for Each Monitored Medium:
The Discharger shall sample the following monitoring points and background monitoring points in accordance with the sampling schedule given under Item Nos. D.15 and D.16 of this M&RP, taking enough samples to qualify for the most appropriate test under Section G (Statistical and Non-Statistical Analyses of Sample Data During a Detection Monitoring Program) of this M&RP.

Class III landfill:

a. For groundwater in the uppermost aquifer: The monitoring points shall be point of compliance wells MW-1, MW-3, and MW-7 (see figure 1, attached).

b. The background monitoring point shall be MW-2.

c. Vadose zone liquid monitoring is not required.

Inert Waste Disposal Facility:

a. Groundwater monitoring is not required.

b. Vadose zone liquid monitoring is not required.

c. Landfill soil-pore gas monitoring monitoring is not required.

17. Initial Background Determination:

For the purpose of establishing an initial pool of background data for each COC at each background monitoring point in each monitored medium 27 CCR, § 20415(e)(6);

a. Whenever a new COC is added to the Water Quality Protection Standard (WQPS), including any added by the adoption of Regional Board Order No. 01-133, the Discharger shall collect at least one sample semi-annually for at least one year from each background monitoring point in each monitored medium and analyze for the newly-added constituent(s); and

b. Whenever a new background monitoring point is added, including any added by Regional Board Order No. 01-133, the Discharger shall sample it at least semi-annually for at least one year, analyzing for all COCs and monitoring parameters.

18. Semiannual Determination of Groundwater Flow Rate/Direction (27 CCR, § 25415(e)(15):
The Discharger shall measure the water level in each well and determine groundwater flow rate and direction in each groundwater body semiannually. This information shall be included in the semiannual monitoring reports required under Item No. D-15.

E. RECORDS TO BE MAINTAINED

19. Written reports shall be maintained by the Discharger or laboratory and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

a. Identity of sample and of the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;

b. Date and time of sampling;

c. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;

d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;

e. Calculations of results; and

f. Results of analyses, and the MDL and PQL for each analysis.

F. REPORTS TO BE FILED WITH THE REGIONAL BOARD

20. A Detection Monitoring Report and an Annual Summary Report shall be submitted pursuant the schedule listed below. In addition, every five years, the Discharger shall submit a report concerning the direct analysis of all COCs (COC Report).

a. The submittal dates for semiannual and annual reporting periods shall be as follows:

Semiannual Reports:

Period	Sampling Period	Reporting Date
Spring/Summer	September	October 30
Fall/Winter	March	April 30

Annual Summary Report:

Period	Reporting Date
January 1 - December 31	February 15

b. Five-year COC monitoring reports shall be submitted to the Regional Board by October 30 and April 30 (alternating Spring/Summer and Fall/Winter COC report) of the sixth year.

c. Semiannual reports shall be comprised of at least the following:

i. Letter of Transmittal:
A letter detailing the essential points of the monitoring program shall accompany each report. Such a letter shall include a discussion of any requirement violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice-president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct;

ii. Each detection monitoring report and each COC report shall include a compliance evaluation summary. The summary shall contain at least:

A. For each monitored groundwater body, a description and graphical presentation of the velocity and direction of the groundwater flow under/around the landfill(s), based upon water level elevations taken during the collection of the water quality data submitted in the report;

B. Pre-Sampling Purge for Samples Obtained from Wells:
For each monitoring well addressed by the report, a description of the method and time of water level measurement, of the type of pump used for purging and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, electrical conductivity and turbidity during purging, the calibration of the field equipment, results of the pH, temperature, electrical conductivity, and turbidity testing, the well recovery time, and the method of disposing of the purge water);

C. Sampling:
For each monitoring point and background monitoring point addressed by the report, a description of the type of pump, or other device, used and its placement for sampling, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person taking the samples, and any other observations).

iii. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points;

iv. For each detection monitoring report and each COC report, include laboratory statements of results of all analyses demonstrating compliance with Section C (Sampling And Analytical Methods) of this M&RP;

v. An evaluation of the effectiveness of the run-off/run-on control facilities;

vi. A summary and certification of completion of all standard observations (Item No. B.6 of the M&RP) for the landfill(s), for the perimeter of the landfill(s), and for the receiving waters.

d. The Discharger shall submit an annual summary report to the Regional Board covering the previous monitoring year. The reporting period ends February 15. This report shall contain:

i. A graphical presentation of analytical data (27 CCR, § 20415(e)(14)):

For each monitoring point and background monitoring point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given monitoring point and background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted date, the Executive Officer may direct the Discharger to carry out a preliminary investigation (27 CCR, § 20080(d)(2)), the Discharger results of which will determine whether or not a release is indicated;

ii. All monitoring analytical data obtained during the previous semiannual monitoring and reporting periods, presented in tabular form as well as on 3 ½-inch diskettes, either in MS-DOS/ASCII format or in another file format acceptable to the Executive Officer. Data sets too large to fit on a single diskette may be submitted on disk in a commonly available compressed format (e.g., PK-ZIP or NORTON BACKUP). The Regional Board regards the submittal of data in hard copy and on diskette as "...the form necessary for..." statistical analysis (27 CCR, § 20420(h));

iii. A comprehensive discussion of the compliance record, and the result of any corrective actions taken, or planned, which may be needed to bring the Discharger into full compliance with the WDRs;

iv. A written summary of the groundwater analyses indicating any changes made since the previous annual report; and

v. An evaluation of the effectiveness of the run on/run-off control facilities, pursuant to 27 CCR, § 20340 (b, c, and d).

e. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report. Each report shall contain the following statement:

f. A duly authorized representative of the Discharger may sign the documents if:

i. The authorization is made in writing by the person described above;

ii. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and

iii. The written authorization is submitted to the Executive Officer.

g. Submit monitoring reports to:

California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013
ATTN: Technical Services Unit

21. Contingency Reporting

a. The Discharger shall report by telephone to Regional Board staff, any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Regional Board within seven days of the verbal report, containing at least the following information:

i. A map showing the location(s) of seepage;

ii. An estimate of the flow rate;

iii. A description of the nature of the discharge (e.g., all pertinent observations and analyses); and

iv. Corrective measures underway or proposed.

b. Should the initial statistical comparison (Section G of this M&RP) or non-statistical comparison indicate, for any COC or monitoring parameter, that a release is tentatively identified, the Discharger shall immediately verbally notify Regional Board staff as to the monitoring point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination (27 CCR, § 20420(j)(1)), and shall carry out a discrete retest in accordance with Item No. G-27 of M&RP. If the retest confirms a release, the Discharger shall carry out the requirements of Item No. F.22.d of the M&RP. In any case, the Discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, and follow up with written results submitted by certified mail within seven days of completing the retest.

c. If either the Discharger or the Regional Board determines that there is significant physical evidence of a release (27 CCR, § 20385(3)), the Discharger shall immediately notify the Regional Board of this fact by certified mail (or acknowledge the Regional Board's determination of a potential release) and shall carry out the requirements of Item No. F.22.d of this M&RP for all potentially-affected monitored media.

d. If the Discharger concludes that a release has been discovered:

i. If this conclusion is not based upon Direct Monitoring of the COCs, the Discharger shall, within thirty days, sample for all COCs at all monitoring points and submit them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Regional Board, by certified mail, of the concentration of all COCs at each monitoring point. Because this scan is not to be tested against background, only a single datum is required for each COC at each monitoring point (27 CCR, § 2040(k)(1));

ii. The Discharger shall, within 90 days of discovering a release, submit a revised Report of Waste Discharge (ROWD) proposing an Evaluation Monitoring Program (EMP) meeting the requirements of 27 CCR, §§ 20420(k)(5) and 20425; and

iii. The Discharger shall, within 180 days of discovering a release, submit a preliminary engineering feasibility study meeting the requirements of 27 CCR, § 20420(k)(6).

e. Any time the Discharger concludes, or the Executive Officer directs the Discharger to conclude, that a liquid release from the landfill(s) has extended beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land (affected persons) that directly overlies any part of the plume.

i. Initial notification to affected persons shall be accomplished within fourteen days of making this conclusion and shall include a description of the Discharger’s current knowledge of the nature and extent of the release; and

ii. Subsequent to initial notification, the Discharger shall provide updates to all affected persons, including any newly affected persons, within fourteen days of concluding there has been any material change in the nature or extent of the release.

G. STATISTICAL AND NON-STATISTICAL ANALYSES OF SAMPLE DATA DURING A DETECTION MONITORING PROGRAM

22. The Discharger shall use the following methods to compare the downgradient concentration of each monitored constituent or parameter with its respective background concentration to determine if there has been a release from the landfill(s). For any given data set, proceed sequentially down the list of statistical analysis methods listed in Item No. G.24 of this M&RP, followed by the non-statistical method in Item No. G.25, using the first method for which the data qualifies. If that analysis tentatively indicates the detection of a release, implement the retest procedure under Item No. G.26.

23. Statistical Methods:
The Discharger shall use one of the following statistical methods to analyze COCs monitoring parameters which exhibit concentrations exceeding their respective MDL in at least ten percent of the background samples taken during that reporting period. Except for pH, which requires a two-tailed analysis, the statistical analysis for all constituents and parameters shall be one-tailed (testing only for statistically significant increase relative to background):

a. One-Way Parametric Analysis of Variance (ANOVA) followed by multiple comparisons (27 CCR § 20415(e)(8)(A)):
This method requires at least four independent samples from each monitoring point and background monitoring point during each sampling episode. It shall be used when the background data from the parameter or constituent, obtained during a given sampling period, has not more than 15% of the data below PQL. Prior to analysis, replace all 'trace' determinations with a value halfway between the PQL and the MDL values reported for that sample run, and replace all non-detect determinations with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient monitoring point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any monitoring point, the Discharger shall conclude that a release is tentatively indicated for that parameter or constituent;

b. One-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons:
This method requires at least nine independent samples from each monitoring point and background monitoring point; therefore, the Discharger shall anticipate the need for taking more samples per monitoring point, based upon past monitoring results. This method shall be used when the pooled background data for the parameter or constituent, obtained within a given sampling period, has not more than 50% of the data below the PQL. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each

downgradient monitoring point shall be tested at 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any monitoring point, the Discharger shall conclude that a release is tentatively indicated for that parameter or constituent; or

c. Method of Proportions:
This method shall be used if the combined data set, the data from a given monitoring point in combination with the data from the background monitoring points, has between 50% and 90% of the data below the MDL for the constituent or parameter in question. This method (1) requires at least nine downgradient data points per monitoring point per reporting period, (2) requires at least thirty data points in the combined data set, and (3) requires that $N^* P > 5$ (where N is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the MDL); therefore, the Discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis (i.e., that there is no release), the Discharger shall conclude that a release is tentatively indicated for that constituent or parameter; or

24. Non-Statistical Method:
The Discharger shall use the following non-statistical method for the VOC_{water} and VOC_{spg} composite monitoring parameters and for all COC which are not amenable to the statistical tests under Item No. G.24 of this M&RP; each of these groupings of constituents utilizes a separate variant of the test, as listed below. Regardless of the variant used, the method involves a two-step process:

a. from all constituents to which the variant applies, compile a list of those constituents which exceed their respective MDL in the downgradient sample, yet do so in less than ten percent of the applicable background samples; and

b. evaluate whether the listed constituents meet either of the test variant's two possible triggering conditions.

25. Background shall be represented by the data from all samples taken from the appropriate background monitoring points during that reporting period (at least one sample from each background monitoring point). The method shall be implemented as follows:

a. For the Volatile Organics Composite Monitoring Parameter for Water Samples (VOC_{water}):
For any given monitoring point, the VOC_{water} monitoring parameter is a composite parameter addressing all VOCs detectable using the appropriate USEPA method including at least all 47 VOCs listed in Appendix I to 40 CFR 258, and all unidentified peaks. Compile a list of each VOC which exceeds its

MDL in the monitoring point sample (an unidentified peak is compared to its presumed (MDL), and also exceeds its MDL in less than ten percent of the samples taken during that reporting period from that medium's background monitoring points.

The Discharger shall conclude that a release is tentatively indicated for the VOC_{water} composite monitoring parameter if the list either contains two or more constituents, or contains one constituent that exceeds its PQL; or

b. For COCs:
Compile a list of constituents that exceed their respective MDL at the monitoring point yet do so in less than ten percent of the background samples taken during that reporting period. The Discharger shall conclude that a release is tentatively indicated if the list either (1) contains two or more constituents, or (2) contains one constituent which exceeds its PQL.

26. Discrete Retest (27 CCR, § 25415 (e)(8)(E)):
In the event that the Discharger concludes that a release has been tentatively indicated (under Item Nos. G.24 or G.25 of this M&RP), the Discharger shall, within 30 days of this indication, collect two new suites of samples for the indicated COCs or monitoring parameters at each indicating monitoring point, collecting at least as many samples per suite as were used for the initial test. Resampling of the background monitoring points is optional. As soon as the data is available, the Discharger shall rerun the statistical method (or non-statistical comparison) separately upon each suite of retest data. For any indicated monitoring parameter or COC at an affected monitoring point, if the test results of either (or both) of the retest data suites confirms the original indication, the Discharger shall conclude that a release has been discovered. All retests shall be carried out only for the monitoring point(s) for which a release is tentatively indicated, and only for the COC or monitoring parameter which triggered the indication there, as follows:

a. If an ANOVA method was used, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples taken from the indicating monitoring point;

b. If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, using the new sample suites from the indicating monitoring point;

c. If the non-statistical method was used:

i. Because the VOC composite monitoring parameters (VOC_{water} or VOC_{spg}) each address, as a single parameter, an entire family of constituents which are likely to be present in any landfill release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that

retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest sample(s) differs from that in the sample which initiated the retest;

ii. Because all COCs that are jointly addressed in the non-statistical testing under Item No. G.25.c of this M&RP, remain as individual COCs, the scope of the laboratory analysis for the non-statistical retest samples shall be narrowed to involve only those constituents detected in the sample which initiated the retest.

H. RESPONSES TO VOC DETECTION IN BACKGROUND

27. Except as indicated in Item No. H.29, if any time the laboratory analysis of a sample from a background monitoring point, sampled for VOCs under Item No. G.26 of this M&RP, shows either two or more VOCs above their respective MDL, or one VOC above its respective PQL, then the Discharger shall immediately notify the Regional Board by phone that possible background contamination has occurred, shall follow up with written notification by certified mail within seven days, and shall obtain two new independent VOC samples from that background monitoring point and send them for laboratory analysis of all detectable VOCs within thirty days. If either or both the new samples validates the presence of VOC(s) at that background monitoring point, using the above procedure, the Discharger shall:

a. Immediately notify the Regional Board regarding the VOC(s) verified to be present at that background monitoring point, and follow up with written notification submitted by certified mail within seven days of validation; and

b. Within 180 days of validation, submit a report, acceptable to the Executive Officer, which examines the possibility that the detected VOC(s) originated from the landfill(s) and proposing appropriate changes to the monitoring program.

28. If the Executive Officer determines, after reviewing the report submitted under Item No. H.28.b, that the detected VOC(s) most likely originated from the landfill(s), the Discharger shall assume that a release has been detected and shall immediately begin carrying out the requirements of Item No. F.22.d of this M&RP.

Ordered by _____
Jonathan Bishop
Interim Executive Officer

August 31, 2004

FIGURE 1:
PETER J. PITCHESS LANDFILL - CLASS III LANDFILL
GROUNDWATER MONITORING NETWORK